

What is claimed is:

1. A process for making a strong metallized iron agglomerate by combining iron bearing materials, a reductant, and cellulose fiber with up to 15% water to form a mixture, forming the mixture into an agglomerate, and heating the agglomerate at a temperature of from about 1000°C to about 1550°C for a period of 6 to 20 minutes.
2. The process of claim 1, wherein said agglomerate is heated for a period of 7 to 9 minutes.
3. The process of claim 1, wherein said agglomerate is heated at a temperature in the range of from 1000°C to 1300°C.
4. A process according to claim 1 wherein said iron bearing materials are selected from the group consisting of iron ore, blast furnace dust, blast furnace sludge, basic oxygen furnace dust, EAF dust, basic oxygen furnace sludge, mill scale, pellet fines, metallized DRI fines, turnings, mill sludge, sinter dust, cupola dust, and mixtures thereof.
5. A process according to claim 1 wherein said cellulose fiber is selected from the group consisting of shredded organic wastes, paper, newsprint, cardboard, wood scrap, bagasse (sugar cane waste), sewage sludge, municipal waste, refuse-derived fuels, and mixtures thereof.

6. A process according to claim 1 wherein said reductant is selected from the group consisting of cellulose fiber, CDQ dust, pulverized coal, coke breeze, petroleum coke fines, charcoal, graphite, blast furnace dust, blast furnace sludge, and mixtures thereof.

7. A process according to claim 1 wherein the agglomerates are initially heated in an oxidizing atmosphere, followed by further heating in an inert or reducing atmosphere.

8. A process according to claim 1, further comprising introducing said agglomerates into a steelmaking furnace as iron-bearing feed material.

9. A process according to claim 1, further comprising briquetting said agglomerates, then introducing said agglomerates into a steelmaking furnace as iron-bearing feed material.

10. A process according to claim 1, wherein from 0.5 to 15 percent of the iron bearing feed material particles are up to 6 mm in size.

11. A process according to claim 1, wherein said agglomerate is fed directly to the heating furnace without any drying step.

12. A process according to claim 1, wherein said cellulose binder addition is 0.5 to 25%.

B3 } 13. A strong, at least 40% metallized iron, agglomerate made by the process of claim 1.

14. A process for making strong, green agglomerates by combining iron bearing materials, a reductant, and a cellulose fiber with up to 15% water.

15. A process according to claim 14, wherein said iron bearing materials are selected from the group consisting of iron ore, blast furnace dust, blast furnace sludge, basic oxygen furnace dust, EAF dust, basic oxygen furnace sludge, mill scale, pellet fines, metallized DRI fines, turnings, mill sludge, sinter dust, cupola dust, and mixtures thereof.

16. A process according to claim 14, wherein said cellulose fiber is selected from the group consisting of shredded organic wastes, paper, newsprint, cardboard, wood scrap, bagasse (sugar cane waste), sewage sludge, municipal waste, refuse-derived fuels, and mixtures thereof.

17. A process according to claim 14, further comprising briquetting said agglomerates, then introducing said agglomerates into a steelmaking furnace as iron-bearing feed material.

18. A process according to claim 14, wherein from 0.5 to 15 percent of the iron bearing feed material particles are up to 6 mm in size.

19. A process according to claim 14, wherein said cellulose binder addition is 0.5 to 25%.

20. A process according to claim 14 wherein said reductant is selected from the group consisting of cellulose fiber, CDQ dust, pulverized coal, coke breeze, petroleum coke fines, charcoal, graphite, blast furnace dust, blast furnace sludge, and mixtures thereof.

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